

Patent claims

1. A stacked plate heat exchanger, in particular oil cooler for motor vehicles, comprising trough-shaped stacking plates (2) and metal turbulence plates (3) which are stacked onto and into one another in an alternating fashion to form a block and each have first and second passage openings (7, 8) for forming distribution and collection ducts (7a, 8a) and are soldered to one another to form first and second flow ducts, the metal turbulence plates (3) forming tie rods between the stacking plates (2) and the block being closed off by means of a base plate (4) and a cover plate (6), **characterized** in that a thin intermediate metal plate (6), which has the hole pattern of the metal turbulence plate (3), is arranged between the uppermost metal turbulence plate (3) and the cover plate (5) and is soldered both to the metal turbulence plate (3) and to the cover plate (5).
2. The stacked plate heat exchanger as claimed in claim 1, **characterized** in that the stacking plates (2) each have a substantially planar face (2a) and annular stamped formations (9), and in that the first passage openings (7) are arranged in the substantially planar face (2a) and the second passage openings (8) are arranged, such that they are raised, in the annular stamped formations (9) and are at least partially closed off outwardly by means of the cover plate (5), and in that an outwardly directed stamped formation (11) is arranged in the cover plate (5) concentrically with respect to the first passage openings (7), and an annular gap (13) is left between the stamped formation (11) and the thin intermediate metal plate (6).

3. The stacked plate heat exchanger as claimed in claim 1 or 2, **characterized** in that the cover plate (5) is soldered to the intermediate metal plate (6) in the region of the second passage openings (8).
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4. The stacked plate heat exchanger as claimed in claim 1, 2 or 3, **characterized** in that the intermediate metal plate (6) has a wall thickness of from 0.1 to 0.5 mm and is preferably solder-plated at each side.
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5. The stacked plate heat exchanger as claimed in one of claims 1 to 4, **characterized** in that the passage openings (7) have an inner diameter D1 and the stamped formation (11) has an inner diameter D2, D2 being approximately 10 mm larger than D1.
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6. The stacked plate heat exchanger as claimed in one of claims 1 to 5, **characterized** in that the cover plate (5) has concentric, spherical-cap-shaped stamped impressions (10, 12) in the region of the passage openings (7, 8).
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7. The stacked plate heat exchanger in a variation of claim 1, **characterized** in that an intermediate metal plate (6) having the hole pattern of the metal turbulence plate (3) is arranged between at least one metal turbulence plate (3) and a stacking plate and/or between a metal turbulence plate and a cover plate and/or between a metal turbulence plate and a base plate (5), and is soldered both to the metal turbulence plate (3) and to the cover plate, the stacking plate and/or the base plate.
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